University of Asia Pacific

Department of Computer Science & Engineering

Final Exam Practice

Course Name: Computer Networks Lab
Course Code: CSE-320

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VLSM:

BASE FOR NETORKS 172.12.0.0/16
ROUTER TO ROUTER 12.12.12.0/30

serial number	subnet name	number of host	Host id	network address	subnet mask	first host	last host	broadcast address	wildcard mask
1	CSE	500	9	172.12.0.0/23	255.255.254.0	172.12.0.1	172.12.1.254	172.12.1.255	0.0.1.255
2	CE	300	9	172.12.2.0/23	255.255.254.0	172.12.2.1	172.12.3.254	172.12.3.255	0.0.1.255
3	Server 1	4	3	172.12.4.0/29	255.255.255.248	172.12.4.1	172.12.4.6	172.12.4.7	0.0.0.7
4	server 2	4	3	172.12.4.8/29	255.255.255.248	172.12.4.9	172.12.4.14	172.12.4.15	0.0.0.7
5	R0-R1	2	2	12.12.12.0/30	255.255.255.252	12.12.12.1	12.12.12.2	12.12.12.3	0.0.0.3
6	R0-R5	2	2	12.12.12.4/30	255.255.255.252	12.12.12.5	12.12.12.6	12.12.12.7	0.0.0.3
7	R1-R2	2	2	12.12.12.8/30	255.255.255.252	12.12.12.9	12.12.12.10	12.12.12.11	0.0.0.3
8	R1-R6	2	2	12.12.12.12/30	255.255.255.252	12.12.12.13	12.12.12.14	12.12.12.15	0.0.0.3
9	R2-R3	2	2	12.12.12.16/30	255.255.255.252	12.12.12.17	12.12.12.18	12.12.12.19	0.0.0.3
10	R3-R4	2	2	12.12.12.20/30	255.255.255.252	12.12.12.21	12.12.12.22	12.12.12.23	0.0.0.3
11	R3-R6	2	2	12.12.12.24/30	255.255.255.252	12.12.12.25	12.12.12.26	12.12.12.27	0.0.0.3
12	R3-R8	2	2	12.12.12.28./30	255.255.255.252	12.12.12.29	12.12.12.30	12.12.12.31	0.0.0.3
13	R4-R9	2	2	12.12.12.32/30	255.255.255.252	12.12.12.33	12.12.12.34	12.12.12.35	0.0.0.3
14	R9-R8	2	2	12.12.12.36/30	255.255.255.252	12.12.12.37	12.12.12.38	12.12.12.39	0.0.0.3
15	R8-R7	2	2	12.12.12.40/30	255.255.255.252	12.12.12.41	12.12.12.42	12.12.12.43	0.0.0.3
16	R7-R6	2	2	12.12.12.44/30	255.255.255.252	12.12.12.45	12.12.12.46	12.12.12.47	0.0.0.3
17	R6-R5	2	2	12.12.12.48/30	255.255.255.252	12.12.12.49	12.12.12.50	12.12.12.51	0.0.0.3
18	DNS	0	4	192.168.10.32/30	255.255.255.252	192.168.10.33	192.168.10.34	192.168.10.35	0.0.0.3

Network Initial Configuration:

Consider the whole network in Area 0:

Router 0:

Enable

Configure Terminal

Router(config)#hostname (Routername)

Router(config)# enable secret 18201025

Router(config)# enable Password 18201025

line console 0

Password:18201025

login

line vty 0 4

Password:18201025

login

exit

Router(config):

Router0:

F0/0:172.12.0.1 255.255.254.0

F1/0:172.12.2.1 255.255.254.0

S2/0:12.12.12.1 255.255.255.252

S3/0:12.12.12.5 255.255.255.252

PC0:172.12.1.254 255.255.254.0

PC1: 172.12.3.254 255.255.254.0

Router 1:
S2/0:12.12.12.2 255.255.255.252
S3/0:12.12.12.9 255.255.255.252
F4/0:12.12.12.13 2 55.255.255.252

Router 2:
S2/0:12.12.12.17 255.255.255.252
S3/0:12.12.12.10 255.255.255.252
F0/0:192.168.10.33 255.255.255.252
Server DNS: 192.168.10.34 255.255.255.252

Router 3:
S2/0:12.12.12.18 255.255.255.252
S3/0:12.12.12.21 255.255.255.252
F4/0:12.12.12.29 255.255.255.252
F5/0:12.12.12.25 255.255.255.252

Router 4:
S2/0:12.12.12.33 255.255.255.252
S3/0:12.12.12.22 255.255.255.252

Router 9:
S2/0:12.12.12.34 255.255.255.252
S3/0:12.12.12.37 255.255.255.252
F0/0:172.12.4.1   255.255.255.248
F1/0:172.12.4.9   255.255.255.248

Server uap: 172.12.4.2 255.255.255.248
Server cse: 172.12.4.3 255.255.255.248
Server bba: 172.12.4.4 255.255.255.248
Server admin: 172.12.4.5 255.255.255.248
Server bd: 172.12.4.10 255.255.255.248
Server info: 172.12.4.11 255.255.255.248
Server nu: 172.12.4.12 255.255.255.248
Server btv: 172.12.4.13 255.255.255.248

Router 8:
S2/0:12.12.12.41 255.255.255.252
S3/0:12.12.12.38 255.255.255.252
F4/0:12.12.12.30 255.255.255.252

Router 7:
S2/0:12.12.12.42 255.255.255.252
S3/0:12.12.12.45 255.255.255.252

Router 6:
S2/0:12.12.12.49 255.255.255.252
S3/0:12.12.12.46 255.255.255.252
F4/0:12.12.12.14 255.255.255.252
F5/0:12.12.12.26 255.255.255.252

Router 5:
S2/0:12.12.12.50 255.255.255.252
S3/0:12.12.12.5 255.255.255.252

Routing Configuration: OSPF
Since there is only one area here, we can configure OSPF according to the router serial.

Router 0:
#Router ospf 025
#network 172.12 .2.0 0.0.1.255 area 18201025
#network 172.12 .0.0 0.0.1.255 area 18201025
#network 12.12.12.0   0.0.0.3 area 18201025
#network 12.12.12.4   0.0.0.3 area 18201025

Router 1:
#Router ospf 025
#network 12.12.12.0 0.0.0.3 area 18201025
#network 12.12.12.8 0.0.0.3 area 18201025
#network 12.12.12.12 0.0.0.3 area 18201025

Router 2:
#Router ospf 025
#network 192.168.10.32 0.0.0.3 area 18201025
#network 12.12.12.16 0.0.0.3 area 18201025
#network 12.12.12.8 0.0.0.3 area 18201025

Router 3:
#Router ospf 025
#network 12.12.12.16 0.0.0.3 area 18201025
#network 12.12.12.20 0.0.0.3 area 18201025
#network 12.12.12.24 0.0.0.3 area 18201025
#network 12.12.12.28 0.0.0.3 area 18201025

Router 4:
#Router ospf 025
#network 12.12.12.20 0.0.0.3 area 18201025
#network 12.12.12.32 0.0.0.3 area 18201025

Router 9:
#Router ospf 025
#network 172.12 .4.0 0.0.0.7 area 18201025
#network 172.12 .4.8 0.0.0.7 area 18201025
#network 12.12.12.32 0.0.0.3 area 18201025
#network 12.12.12.36 0.0.0.3 area 18201025

Router 8:
#Router ospf 025
#network 12.12.12.28 0.0.0.3 area 18201025
#network 12.12.12.36 0.0.0.3 area 18201025
#network 12.12.12.40 0.0.0.3 area 18201025

Router 7:
#Router ospf 025
#network 12.12.12.40 0.0.0.3 area 18201025
#network 12.12.12.44 0.0.0.3 area 18201025

Router 6:

#Router ospf 025
#network 12.12.12.12 0.0.0.3 area 18201025
#network 12.12.12.24 0.0.0.3 area 18201025
#network 12.12.12.44 0.0.0.3 area 18201025
#network 12.12.12.48 0.0.0.3 area 18201025

Router 5:

#Router ospf 025
#network 12.12.12.4 0.0.0.3 area 18201025
#network 12.12.12.48 0.0.0.3 area 18201025

Simulation in Cisco Packet:

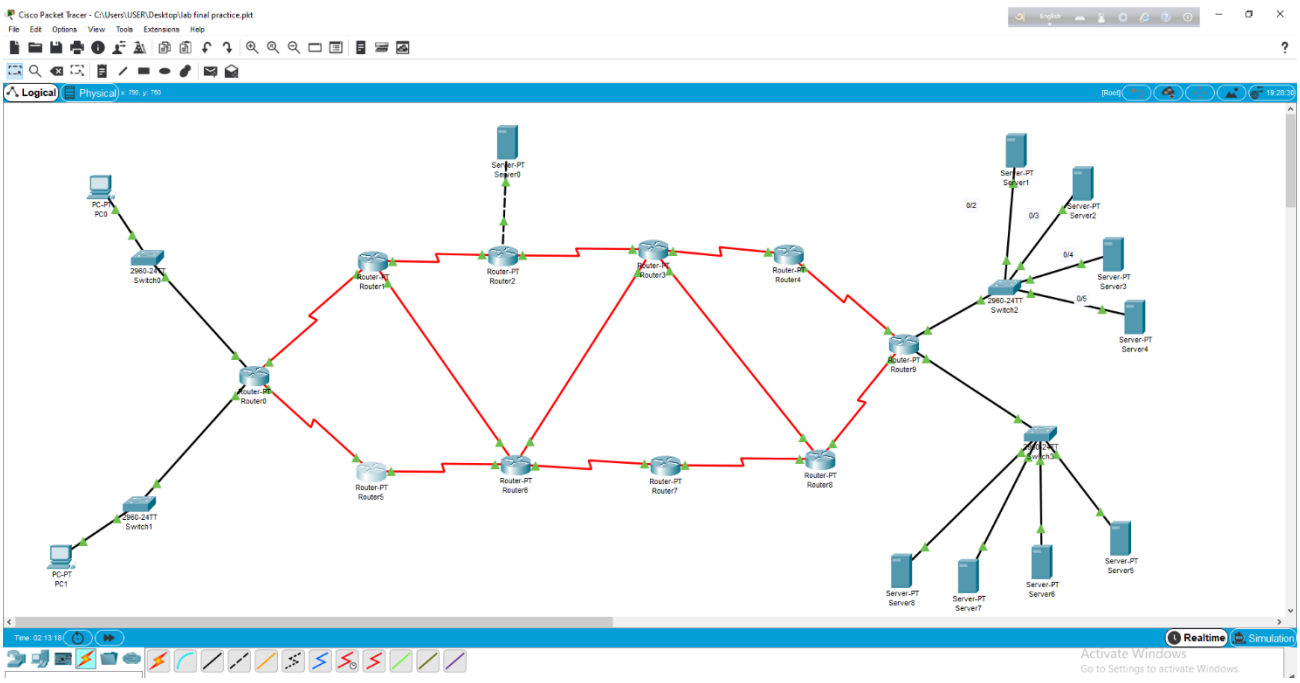


Figure1: After Configuration Network.

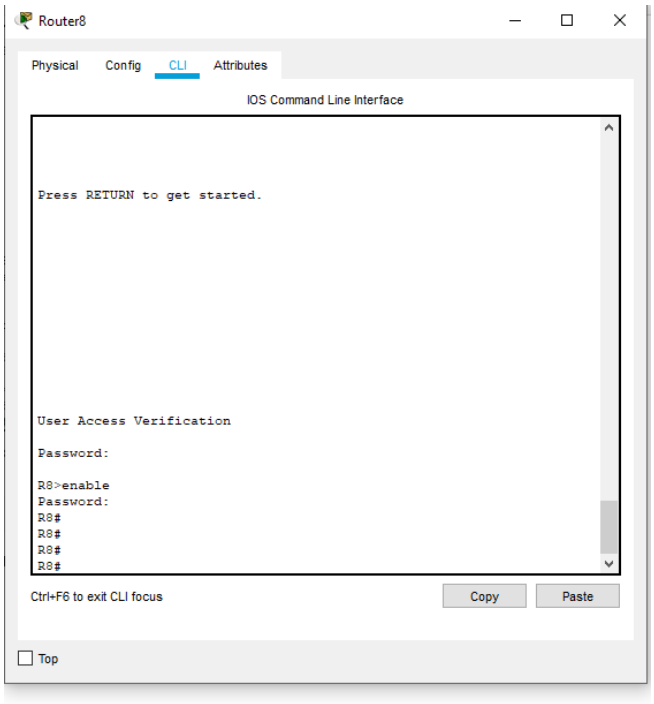


Figure 2: Enter console password then enable password and enter router.

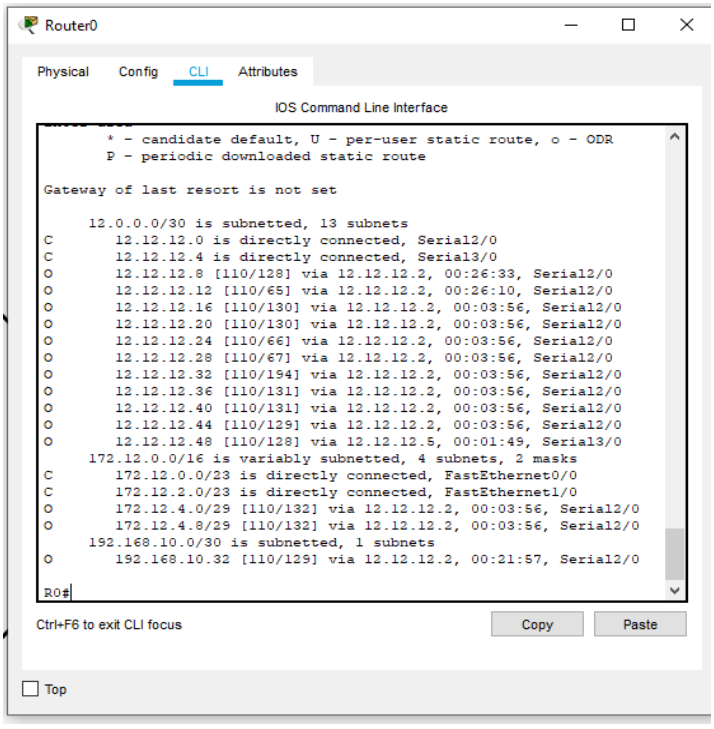


Figure 3: Show ip route configuration after ospf configuration.

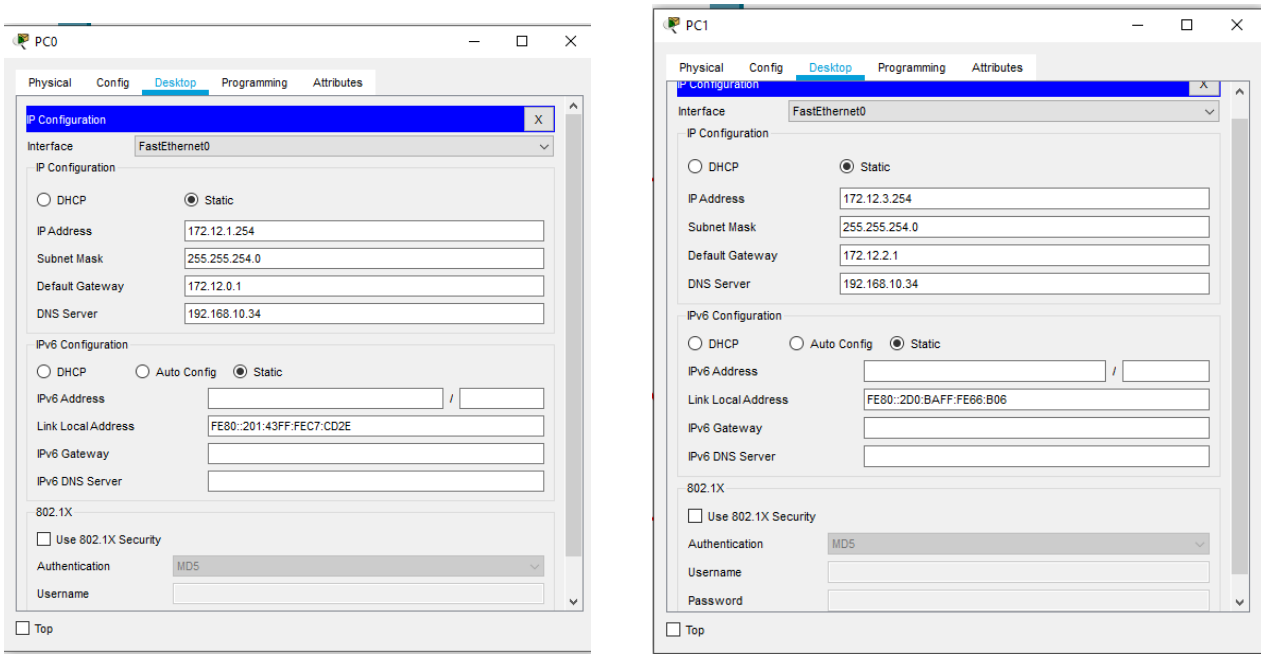


Figure 4: PC0 and PC1 Configuration.

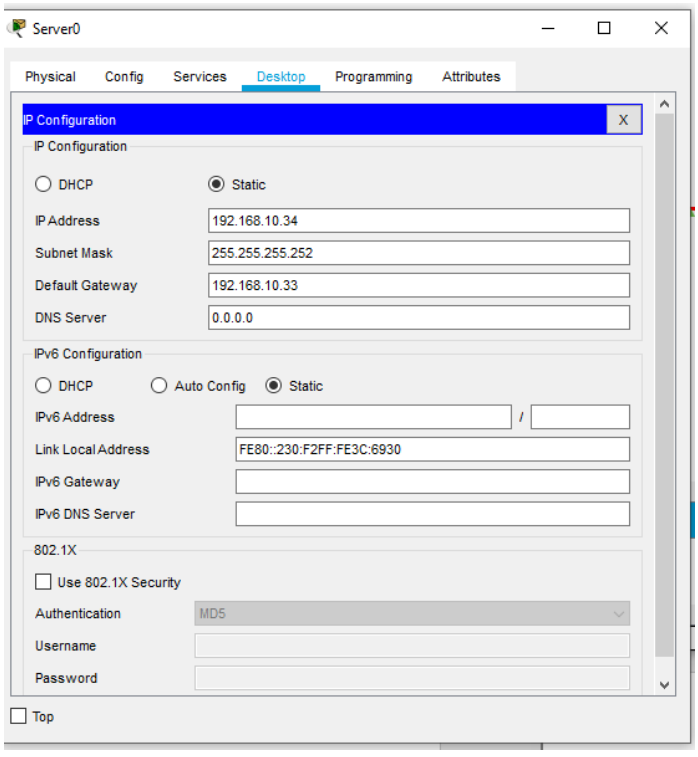


Figure 5: DNS Server Configuration.

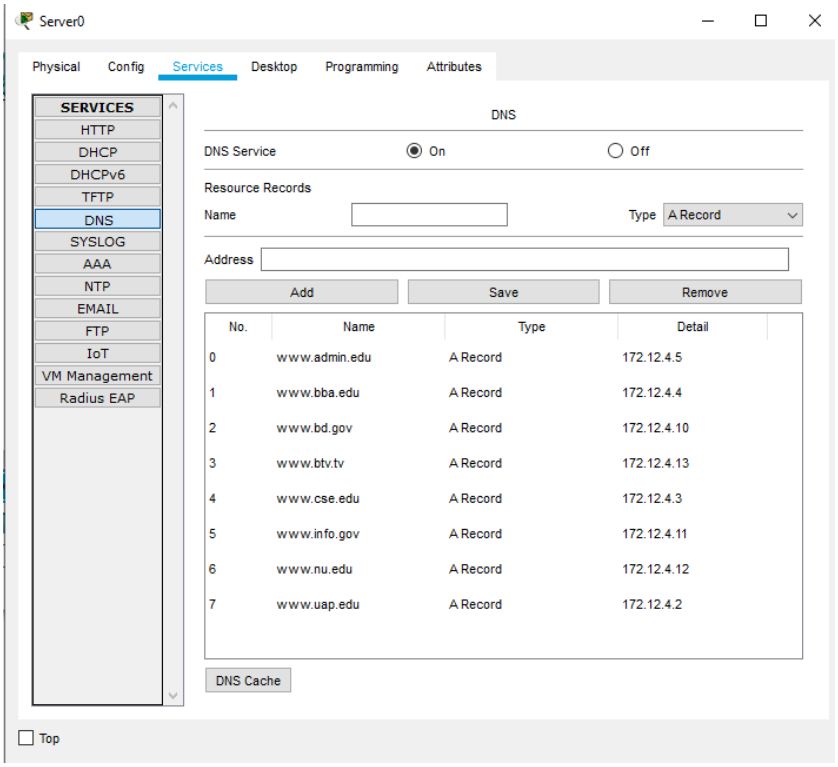
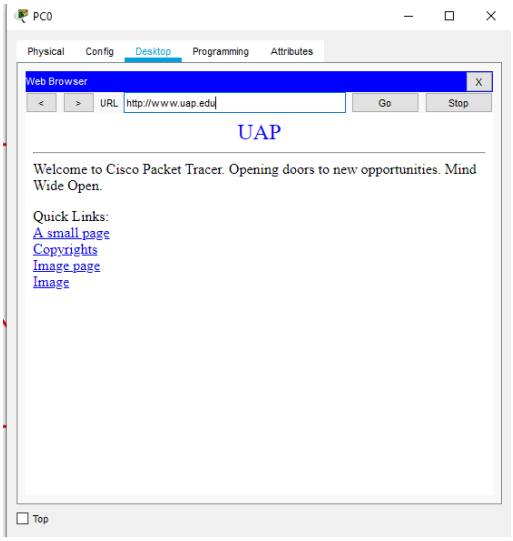


Figure 6: Add web server address to DNS server.



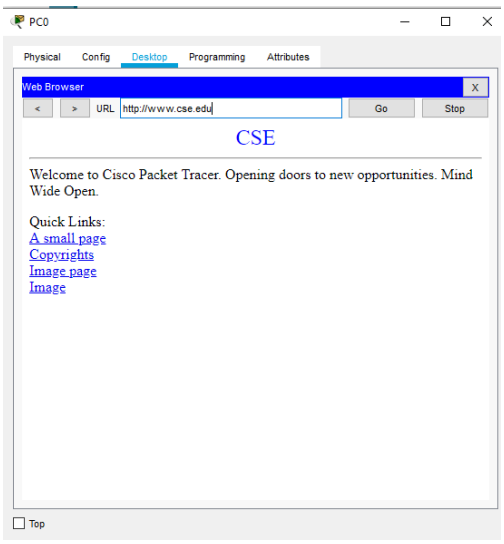
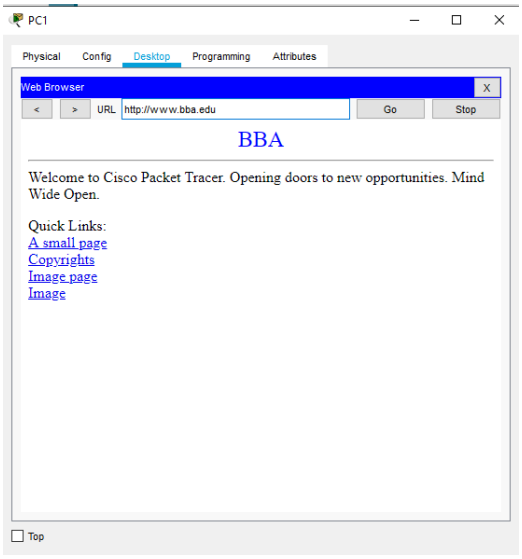
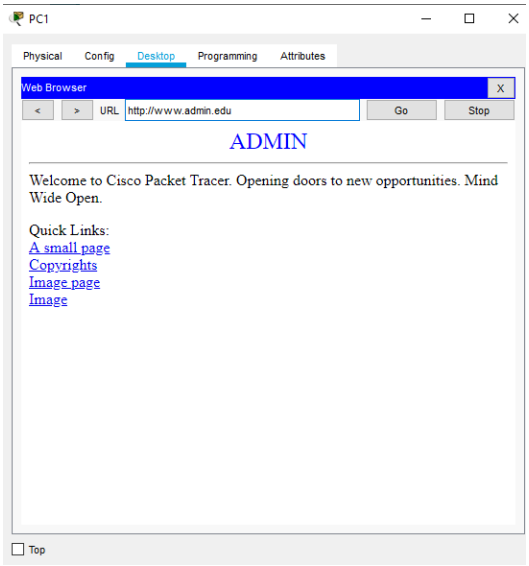
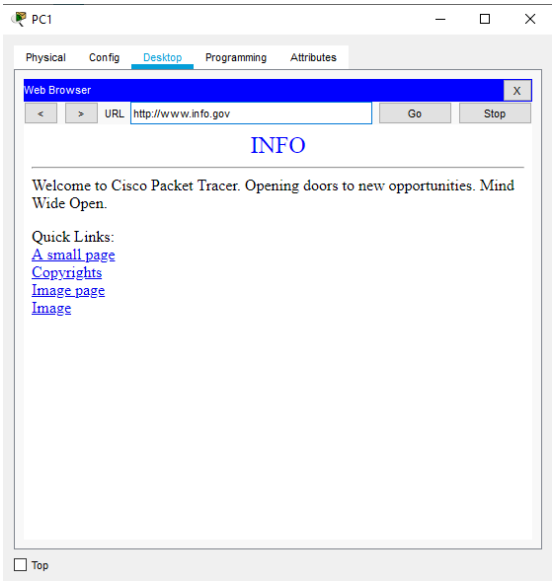


Figure 7: Browse webserver from PC0.







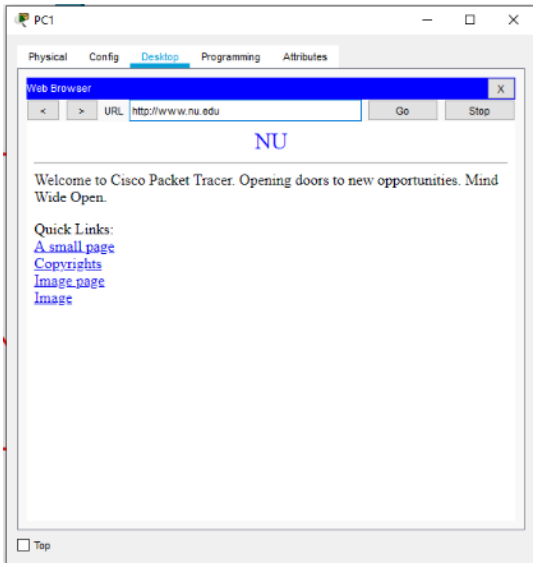


Figure 8: Browse webserver from PC1.